

CALIFORNIA ENVIRONMENTAL QUALITY ACT

INITIAL STUDY

For

California Universal Waste Rule

DTSC Control Number R-97-08

The Department of Toxic Substances Control (DTSC) has completed the following Initial Study for this project in accordance with the California Environmental Quality Act (§ 21000 et seq., California Public Resources Code) and implementing Guidelines (§ 15000 et seq., Title 14, California Code of Regulations).

I. PROJECT INFORMATION

Project Name: Universal Waste Rule

Site Location: Statewide

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Project Description: The project is the adoption of new regulations entitled the “Universal Waste Rule,” identified the DTSC Control Number R-97-08. The regulations are proposed for adoption by the California Department of Toxic Substances Control (DTSC), a Department within the California Environmental Protection Agency (Cal/EPA). The regulations are based on parallel Federal regulations adopted by the United States Environmental Protection Agency (U.S. EPA) from 1995 to 1999.

The regulations would establish special management standards for a new class of hazardous wastes called “universal wastes.” Universal wastes include:

- S Hazardous waste batteries, except automotive. Universal waste batteries include alkaline, sealed lead acid, nickel-cadmium, nickel metal hydride, silver oxide, and virtually all other batteries, except automotive type spent lead acid storage batteries.
- S Hazardous waste thermostats. Universal waste thermostats are those thermostats which use an ampule (small glass container) of mercury to make electrical contact.
- S Hazardous waste lamps. Universal waste lamps are those lamps identified as hazardous waste including most fluorescent tubes, high intensity discharge lamps, mercury vapor lamps, and other “street light” type lamps.

This project description will begin with an overview of the wastes designated as universal wastes. It will explore the regulatory status of these wastes under both the current emergency Universal Waste Rule and the pre-existing general hazardous waste control law. The project description will then set forth a detailed analysis of how the proposed regulations differ from the underlying general hazardous waste management standards that applied prior to adoption of the universal waste emergency rules. The rationale for the reduced management standards proposed to be applied to universal wastes will be discussed along with a general discussion of the philosophy behind both the federal Universal Waste Rule and the proposed California Universal Waste Rule.

Last, the baseline for analyzing the environmental impacts of the changes to the regulatory status of the wastes designated as universal wastes will be discussed.

Note that this project description is a brief summary of the regulations. For more detailed discussions, see the regulatory documents incorporated into this document by reference.

Summary of the Proposed Rules

This section of this document is intended to give the reader an overview of the standards proposed for managing universal wastes.

The proposed California Universal Waste Rule (UWR) would establish special management standards for hazardous waste batteries, thermostats, and lamps. It would closely parallel the federal Universal Waste Rule, but would have some standards that are different than those specified under the federal Universal Waste Rule. These proposed regulations would amend sections 66260.10 and 66260.12 of Chapter 10, section 66262.11 of Chapter 12, section 66264.1 of Chapter 14, section 66265.1 of Chapter 15, section 66268.1 of Chapter 18, and section 66270.1 of Chapter 20, Division 4.5, Title 22, California Code of Regulations (22 CCR). A new section 66261.9 of Chapter 11, and a new Chapter 23, Division 4.5, 22 CCR, would also be created.

The State Universal Waste Rule would establish the following special standards for universal wastes. Generators would be required to dispose of their universal wastes in hazardous waste landfills or recycle their universal wastes at authorized hazardous waste recyclers, but would be allowed much simpler storage and shipment rules; only ultimate disposition (disposal or recycling) would be fully regulated under the hazardous waste facility permit program. To simplify transportation, universal waste could be transported on a bill of lading rather than a hazardous waste manifest. Additionally, universal waste could be transported by common carriers instead of registered hazardous waste transporters. To promote collection for ultimate hazardous waste disposal or recycling, businesses, government and other entities and households would be allowed to operate as offsite accumulation points without requiring authorization from DTSC.

The proposed rules would establish a system for managing universal wastes that is very different from the existing requirements for other hazardous wastes. It would focus on moving universal wastes to a proper ultimate disposition without imposing detailed, prescriptive requirements on intermediate management.

Status of Universal Waste Prior to the Emergency Universal Waste Rule

DTSC's Universal Waste Rule designates three wastes as universal wastes. The materials proposed as universal wastes meet at least one of the criteria for identifying hazardous wastes and, prior to the emergency Universal Waste Rule, were subject to all the standards of the Hazardous Waste Control Law.

These wastes (with the partial exception of fluorescent tubes) have been subject to all the standards of the hazardous waste control law for many years, including generator standards, manifesting and hazardous waste transporter requirements, and disposal or recycling at an authorized facility. Few persons have complied with the hazardous waste management standards for these wastes. For instance, few people have discarded flashlight batteries via a hazardous waste transporter on a manifest and few flashlight batteries have been sent to Class I hazardous waste disposal sites. Likewise, to date, enforcement actions have generally not been initiated against households and businesses that improperly dispose of batteries.

With the almost universal non-compliance with hazardous waste standards for universal wastes, virtually all universal wastes were ultimately disposed at class III (non-hazardous waste) landfills that are not sited, designed, or operated for receipt of hazardous waste.

The lack of emphasis on enforcement of hazardous waste standards for the wastes proposed as universal wastes was due to:

- S Inspection of generators of universal wastes has always been of lower priority due to the small individual size of universal wastes and the lower hazards posed by individual universal wastes (as compared to the larger quantities and greater hazards of industrial hazardous wastes).
- S Limited resources for inspecting hazardous waste generators and enforcing the Hazardous Waste Control Law. These resources have traditionally been dedicated to oversight of generators and other handlers of industrial hazardous wastes.
- S The huge numbers of generators of universal wastes have very limited knowledge of both the hazardous classification of these wastes and the hazardous waste control regulations.

Note, however, that the "destination facilities," the hazardous waste landfills and recyclers to which universal wastes must ultimately be sent, have been given a high priority for regulation befitting the greater hazards of aggregate quantities of universal wastes. Currently, any such facility allowed to receive the waste under the proposed regulations has a permit. Any new recycling or disposal facilities will likewise require authorization from DTSC prior to commencing operation.

The State's Universal Waste Emergency Regulations

The regulatory status of all the wastes identified as universal wastes changed on March 6, 2000 when California's Universal Waste emergency regulations were adopted. These rules essentially applied the federal universal waste

management standards to most hazardous waste batteries and all hazardous waste lamps and thermostats. The emergency regulations addressed hazardous waste batteries, lamps, and thermostats including both those regulated under Federal law (RCRA hazardous waste) and those regulated only under State law (non-RCRA hazardous waste). While the State's emergency rule was broader in its scope than the federal rule (by including both RCRA and non-RCRA waste), the actual management standards were identical to those of the federal universal waste rule. Two exemptions found in the federal law were adopted in the state emergency rule:

- Household exemption: The federal Universal Waste Rule permits households to manage universal wastes as hazardous waste pursuant to general RCRA hazardous waste rules or pursuant to the federal Universal Waste Rule. Since RCRA exempts households from federal hazardous waste management requirements, the federal Universal Waste Rule, in conjunction with RCRA, essentially allows households to manage and dispose of Universal wastes as non-hazardous waste.

In its emergency regulations, California adopted a household exemption with a somewhat narrower scope than the federal rule because the exemption applies only to universal wastes produced by true private households rather than the broader set of households exempted under the federal household exemption, which includes group facilities, hotel, motels, and other non-private households. The State adopted a household exemption because the State's household hazardous waste programs were not prepared or funded to manage the large volumes of universal waste expected. Especially problematic were space intensive and fragile wastes such as lamps.

- Small quantity exemption: Under the emergency Universal Waste Rule regulations, "conditionally exempt small quantity universal waste generators" are not required to manage or dispose of their universal waste as hazardous waste. The exemption in the State's emergency regulations parallels the federal conditionally exempt small quantity generator exemption found in Title 40, CFR, section 261.5, but is narrower in scope because it bases monthly quantity calculations on total hazardous waste generation (both RCRA and non-RCRA hazardous waste) rather than just totaling RCRA hazardous waste as under the federal regulations. This exemption was adopted to allow a collection and recycling infrastructure to develop smoothly, without a sudden overload on the management system.

DTSC feared that immediate regulation of all universal waste generators (including households and small generators) would divert so many fluorescent tubes (and other universal wastes) to collection systems, recycling and disposal facilities that they would be overloaded. Overloading the destination facilities would have raised the danger of mismanagement and site contamination. It may have also provided an incentive for excessive recycling and disposal fees that would both injure California businesses and establish a pattern of illegal disposal that would be difficult to counter.

The Proposed Regulations

The proposed regulations generally mirror the federal universal waste rule with some modifications. Under the State rule, universal wastes include not only those identified as hazardous wastes under the federal program (RCRA hazardous waste), but also those identified as hazardous under State law but not under federal law (non-RCRA

hazardous waste). Almost all hazardous waste batteries are included, as are all hazardous waste thermostats and all hazardous waste lamps.

DTSC has chosen not to include canceled or suspended pesticides in this rule. Canceled or suspended pesticides are designated as universal wastes in the parallel federal rule. For reasons discussed in the Initial Statement of Reasons, DTSC believes that not including pesticides as universal wastes provides superior protection of the environment.

DTSC proposes to require that all lamps be recycled in order to qualify for management under the universal waste rule. Three facilities are currently authorized to handle the volume that will result. Minor expansion of the facilities by longer operating hours and, if necessary, addition of new processing equipment will enable the lighting waste recyclers to cope with the immediate need for recycling from the larger generators and the ultimate needs from all generators after the exemptions sunset.

DTSC proposes adopting and applying the universal waste standards in lieu of the full Hazardous Waste Control Law (chapter 6.5 of the California Health and Safety Code and the Title 22, Division 4.5 implementing regulations) because it agrees with U.S. EPA that regulation under universal waste standards will divert more universal waste from the solid waste stream to proper disposal. There are a number of reasons why DTSC has reached this conclusion:

- Universal waste regulations in California will provide standards for approximately one million individual businesses and over 11 million households. Currently, there are approximately 72,000 active generators of other hazardous wastes.
- There are too many individual businesses and households to address and inspect effectively within the constraints of the existing generator regulatory program, which is focused on traditional, generally industrial hazardous wastes.
- The complexity and cost of the full hazardous waste control regulations serve as an incentive for illegal and environmentally improper disposal of universal wastes. Universal wastes are small (batteries) or can be broken and easily hidden (lamps), making detection of illegal transportation and disposal difficult.
- The existing Hazardous Waste Control Law is written to address an unlimited variety of hazardous wastes. It applies requirements tailored for a wide variety of wastes with a vast range of physical states that pose a wide range of threats. Universal wastes, on the other hand, are a specific subset of hazardous wastes in definite, well-understood physical states that pose well-characterized, lower risk, hazards.
- The existing Hazardous Waste Control Law is tailored to a small number of industrial businesses and a group of other businesses that use hazardous materials. Those businesses expect to be regulated for their hazardous waste and are generally familiar with the rules. Universal wastes, on the other hand, are generated by virtually all businesses, government and other entities, and most households; these generators predominately neither know nor understand the full Hazardous Waste Control Law.

An additional discussion of the rationale behind the universal waste standards is found in U.S. EPA's preamble to the

universal waste proposed and final rules and the rule adding hazardous waste lamps to the universal waste rule. The documents are listed in the summary of Authority and References in the Initial Statement of Reasons and have been incorporated by reference into this environmental analysis.

DTSC has proposed, in the UWR, retaining the State version of the household and conditionally exempt small quantity generator exemptions for only four years. After that time, the exemptions would sunset and all commercial and household universal wastes would be regulated as universal wastes. DTSC is not proposing permanent small quantity or household exemptions because that would allow a very large volume of hazardous waste to escape regulation in the long term and would fail to fully address the public health problem for which the regulations are being adopted. DTSC estimates that only 30% - 70% (30% estimated by General Electric Lighting and 70% by the U.S. EPA) of the universal wastes would be permanently diverted from non-hazardous disposal sites if these exemptions were permanently retained.

How the project differs from pre-existing law

Universal waste management standards differ greatly from the general hazardous waste management standards for a person handling the universal waste until the waste arrives at the endpoint facility. Because each universal waste was previously subject to the full hazardous waste management standards, the project, in its legal essence, is the change in management standards from the general hazardous waste management standards to the universal waste standards. The following table summarizes the standards required under the general hazardous waste management regulations and the universal waste management standards. The impacts of the change are discussed later in this document.

Type of handler	General hazardous waste management standards	Universal Waste Rule management standards
Generator	<p>Classify waste</p> <p>Notify/obtain EPA ID number</p> <p>Formal employee training, records retention</p> <p>Contingency plan for hazardous waste areas</p> <p>90/180/270 day accumulation time limit depending on generation rate and location</p> <p>Specific hazardous waste labeling with dangers and accumulation start time</p> <p>Storage area standards - signs, separation of incompatibles</p> <p>Container management standards - condition of containers, closed containers</p> <p>Use manifest for shipping and use a registered hauler</p> <p>Send only to permitted facility</p>	<p>Classify waste</p> <p>Handlers with >5000kg onsite must notify/obtain ID number</p> <p>Train informally (signs, printed instructions) (smaller handlers) or train formally (>5000kg onsite)</p> <p>Contingency plan for universal waste not required</p> <p>Accumulation time limit of 1 year</p> <p>Label as universal wastes</p> <p>Signs not required</p> <p>Protect universal wastes from breakage (release). Limit treatment to cleanup of releases, removal of mercury ampules, containment of leaking batteries</p> <p>Manifest and registered hauler not required for shipping</p> <p>Do not dispose directly. Take to handler or authorized hazardous waste disposal or recycling facility</p>

Type of handler	General hazardous waste management standards	Universal Waste Rule management standards
Transporter	Registration - application, insurance Take to permitted facility Clean up releases Use manifest	No registration required Do not dispose directly. Take to handler or authorized disposal or recycling facility. Clean up releases Option to use bill of lading
Transfer facility - exempt	Keep only 10 days in areas zoned industrial, six days in all other areas - no repackaging, pumping, or other treatment	Keep only 10 days in areas zoned industrial, six days in all other areas - no repackaging, pumping, or other treatment
Transfer facility - non-exempt	Hazardous waste facilities permit or other grant of authorization (see facility standards below for discussion of requirements)	Same standards as universal waste generator (see above) (no authorization required)
Intermediate accumulation facility	Hazardous waste storage facility permit or other grant of authorization - (see facility standards below for discussion of requirements)	Same standards as universal waste generator (see above) (no authorization required)

Type of handler	General hazardous waste management standards	Universal Waste Rule management standards
Disposal or recycling facility	<p>Hazardous waste disposal or recycling facility permit or other grant of authorization is required.</p> <p>Permit process with public notice and comment, hearings, appeal rights</p> <p>Pre-review and approval for all facility plans and documents prior to authorization</p> <p>Hydrogeologic assessment and monitoring for some facilities</p> <p>Individual CEQA determination</p> <p>Extensive facility technical standards for security, waste analysis, container and tank management, waste acceptance</p> <p>Priority for surveillance and enforcement by DTSC</p>	<p>Hazardous waste disposal or recycling facility permit or other grant of authorization is required - see facility standards to the left for a condensed discussion of requirements</p>

Consequences of the Changes in Management Standards under the Universal Waste Rule

The changes in management standards under the Universal Waste Rule (UWR) would apply performance standards to managing the universal waste subset of hazardous wastes that are quite different from the general hazardous waste management standards. The changes would have the following salient effects when the assumption is made that all persons are currently managing their universal wastes pursuant to all legally required standards:

Generator: The training requirements under the proposed rule would be much less stringent for small quantity handlers (those persons with <5000 kg of universal waste onsite at any one time), requiring only that employees be “informed” of proper universal waste management rather than formally trained. Records would not be required to prove that employees had been trained. Note that this training only addresses teaching employees to comply with the management standards for proper management of universal wastes; safety training is required for handling hazardous materials, including universal wastes, under the California Occupational Safety and Health Administration (CalOSHA) and federal OSHA rules but is not required under the Hazardous Waste Control Law.

Contingency planning: Generators would not be required to address their universal wastes in a hazardous waste contingency plan. However, the simple and small nature of individual universal wastes makes contingency planning less important. Under the proposed regulations, broken lamps would have to be managed as hazardous waste and breakage of lamps would trigger the requirement to comply with all of the traditional generator standards for the broken lamps.

Storage requirements: Prescriptive storage requirements would not apply. The universal wastes would have to be stored in a manner that protects them from release. Note that broken lamps would need to be managed as hazardous waste and would trigger all the hazardous waste generator standards. Leaking batteries, a condition which could expose persons to corrosive and toxic materials, could still be managed as universal wastes but would need to be contained in a manner that prevents release (and, therefore, exposure).

Absence of manifest requirement: The lack of the uniform hazardous waste manifest would prevent simple tracking of shipments of universal waste. It would make determining responsible parties for contaminated sites more difficult. It would not, however, preclude inspection and enforcement because every business is presumed to generate universal wastes and can be inspected as a generator.

Transporter: The absence of registration would not necessarily have a significant impact. The major benefit of registration is now a slightly higher level of insurance and the ability, through enforcement, to revoke authorization to haul hazardous waste. All drivers, including common carriers, must have specified levels of insurance to operate in the State. For common carriers hauling universal wastes identified as U.S. Department of Transportation (DOT) hazardous materials, a hazardous materials endorsement would still be required on a driver’s license with or without hauler registration.

Intermediate accumulation points: Under the Universal Waste Rule, these points would be regulated as “handlers” of universal waste according to the same standards that apply to generators. No facility permit or

other grant of authorization would be required. No public participation process, no pre-review, no siting and location standards would be applied. Thus, there would not be a CEQA determination required by the State for permitting activities such as offsite accumulation. Facilities would be subject to the flexible performance standards of the Universal Waste Rule for storage of universal wastes rather than the prescriptive technical standards of the general hazardous waste management standards. Note that other agencies (local land use) may have to make discretionary decisions concerning these sites, potentially requiring review under CEQA.

How universal wastes would be managed under the proposed Universal Waste Rule

Universal wastes are generated by virtually all entities in the State including all businesses, governmental agencies, and households. Generators of universal waste would have several options for managing their universal waste:

Accumulation for shipment: Many entities would accumulate their universal wastes for a period of time (up to one year) until they had accumulated enough to make shipment to a disposal site or a recycler economically efficient. Households could accumulate their universal wastes for up to one year before taking them to a household collection facility for proper disposal or recycling.

Battery takeback: Nickel cadmium batteries could be returned to any one of the national retailers (Radio Shack, WalMart, etc.) participating in the recycling program operated by the Recyclable Battery Recycling Corporation of America (RBRCA). The retailers would then accumulate quantities in five gallon pails and ship them to designated battery recyclers. Alternatively, persons generating Nickel Cadmium batteries can call the RBRCA using an 800 number and obtain mailing envelopes to mail their batteries to a designated recycler free of charge. It is expected that other rechargeable batteries will be incorporated into this program as it matures.

Thermostat takeback: The Thermostat Recycling Corporation of America (TRCA) will supply a mailing envelope and cushioning material to send a thermostat, free of charge, to a designated mercury recycler. Heating, ventilation, and air conditioning contractors are routinely supplied with these mailers. Consumers can call to request mailers or can deliver thermostats to a household hazardous waste collection event or facility.

Household hazardous waste collection facilities: Augmentation of the current household hazardous waste collection programs is the focus of a Cal/EPA workgroup being formed to develop implementation plans for universal waste collection at household hazardous waste facilities, both permanent and temporary. These household hazardous waste collections will provide collection services for both households and "small quantity commercial sources," which comprise around 95-98% of all California businesses. The ability to self transport universal wastes to these facilities allows simple and efficient, yet environmentally appropriate, management for both householders and smaller businesses. The workgroup will seek funding solutions and expansion of household hazardous waste collection programs to all areas of the State.

In-store takeback programs: The Cal/EPA work group will work with retailers to encourage take back programs for fluorescent tubes and batteries. Some businesses already accept batteries for accumulation and disposal (see above).

In-house intermediate accumulation points: The lack of the permit requirement for intermediate accumulation points allows firms and government agencies with multiple locations to designate one location as their central accumulation point for universal wastes. This point would accept universal wastes from all the firm or governmental entity's locations. The intermediate accumulation points could accumulate universal wastes (for up to one year) until they had accumulated a full load (or other economically efficient quantity) of universal waste. This larger quantity would then be shipped to a hazardous waste recycler or a hazardous waste disposal facility or could be picked up and managed by a firm in the business of accumulating and trans-shipping universal wastes. The ease with which an intermediate accumulation point can be established would allow businesses and government agencies to accumulate their universal wastes in safer locations away from both the public and the bulk of their employees. School districts, for instance, could accumulate their universal waste in a corporation yard away from sensitive receptors such as students.

Commercial universal waste management firms: The ability to operate an intermediate accumulation point without the time and expense of a permit would allow creation of new businesses to pick up universal wastes from smaller businesses and even households. They would then transport the universal wastes to a central location to accumulate larger quantities for economically efficient hazardous waste disposal and recycling.

The proposed temporary exemptions: The State is proposing that the exemptions in the emergency Universal Waste Rule be continued for a four year period after the effective date of the proposed regulations. This period is intended to give sufficient time for:

- (a) Government entities to augment household hazardous waste collections so that they can take and properly manage universal wastes;
- (b) Retailers and wholesalers to develop takeback programs;
- (c) Third party universal waste collection, accumulation, and trans-shipment firms to develop;
- (d) The Thermostat Recycling Corporation of America (TRC) and the Recyclable Battery Recycling Corporation of America (RBRCA) to increase their outreach to California generators and sellers of universal wastes.

The exemptions are offered because all of these simple and inexpensive alternatives for universal waste recycling and disposal do not currently exist or are not "geared up" for accepting the quantities of universal waste produced in California. Requiring universal waste recycling or disposal without simple collection and shipment alternatives would drive households and many smaller businesses to illegal, environmentally harmful disposal.

While it can be argued that granting such exemptions for the first four years is a relaxation of the management standards previously in effect (the full general hazardous waste management standards), few, if any, households and small businesses complied with the standards. The exemptions, in a real world sense, simply recognize the actual management practices that preceded the emergency Universal Waste Rule. The emergency rule exempts households and smaller businesses. The phase-out of the exemptions in the proposed regulations would change these practices in

measured manner likely to generate maximum environmental protection.

DTSC has determined that canceling the exemptions, while simple and cheap management alternatives do not exist, would perpetuate longstanding and difficult to break practices of illegal disposal. This illegal disposal occurs when universal waste is hidden among the non-hazardous trash or disposed to the general environment (outside of landfills) in an environmentally damaging manner.

Agencies Having Jurisdiction Over the Project/ Types of Permits Required:

DTSC has the authority to decide whether or not to adopt these regulations. The regulations are subject to review and approval by the California Office of Administrative Law (OAL). OAL's review is limited to determining whether the regulations comply with the standards for regulations set forth in the Government Code and must approve the regulations if they are found to be consistent with those standards. The California Integrated Waste Management Board funds and promotes household hazardous waste collection events (which must obtain authorization to operate). The local agencies designated as Certified Unified Program Agencies (CUPAs) implement inspections and enforcement of the proposed regulations for generators of universal wastes.

II. DISCRETIONARY APPROVAL ACTION BEING CONSIDERED BY DTSC

<input checked="" type="checkbox"/> Initial Permit Issuance	<input checked="" type="checkbox"/> Removal Action Plan
<input checked="" type="checkbox"/> Permit Renewal	<input checked="" type="checkbox"/> Removal Action Workplan
<input checked="" type="checkbox"/> Permit Modification	<input checked="" type="checkbox"/> Interim Removal
<input checked="" type="checkbox"/> Closure Plan	<input checked="" type="checkbox"/> Other (Specify)
<input type="checkbox"/> Regulations	_____

Program/ Region Approving Project: DTSC Headquarters, Hazardous Waste Management Program

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III. ENVIRONMENTAL CONDITIONS POTENTIALLY AFFECTED

The boxes checked below identify environmental factors which were found in the following ENVIRONMENTAL

SETTING/IMPACT ANALYSIS section to be potentially affected by this project, involving at least one impact that "Potentially Significant" or "Potentially Significant Unless Mitigated."

G Earth	G Risk of Upset	G Aesthetics
G Air	G Transportation/ Circulation	G Cultural/ Paleontological Resources
G Surface and Groundwater	G Public Services	G Cumulative Effects
G Plant Life	G Energy	G Population
G Animal Life	G Utilities	G Housing
G Land Use	G Noise	G Recreation
G Natural Resources	G Public Health and Safety	

IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS

This project is the adoption of a proposed set of regulations. The environmental setting for the project is the entire State of California and virtually all its inhabitants, businesses, governments, and other entities. Universal wastes are universally produced. Few entities in the State do not use batteries and few domiciles and businesses in the State do not use fluorescent lighting tubes. The physical setting covers the entire state and all its climates, geologic zones, ecosystems, waters, deserts, mountains, cities, towns including every part of the State where cameras, radios, flashlights, and other generators of potential universal wastes are used.

Existing Conditions: The baseline for this Analysis

The existing conditions for this analysis are complex but vital for understanding the actual environmental impacts of project. In simplistic terms, the current legal status is that all universal wastes are subject to the emergency universal waste regulations. These emergency regulations can, however, be discounted because they will expire if this project does not move forward to completion. Thus, an environmental impact analysis that assumes emergency rules do not exist is more appropriate.

Absent the emergency rules, all proposed universal wastes, except batteries covered under the FBMA, are hazardous wastes and are legally subject to the full panoply of hazardous waste management standards. The baseline for analysis of the impacts of this project is thus the full hazardous waste management standards with all the protections built into the system, including inspection and enforcement.

Very little or no universal waste has actually been disposed in hazardous waste landfills or sent to hazardous waste recyclers as required by law. The State's lighting waste recyclers, for instance, report receiving less than 10% of the waste fluorescent tubes sold in the State prior to the emergency universal waste regulations. (Note that the recyclers report a substantial increase in the recycling rate following the adoption of the emergency Universal Waste Rule.) For

persons have accumulated spent flashlight batteries in a special, segregated area labeled with “danger, hazardous wastes” signs. Few persons have actually sent batteries to a hazardous waste landfill or recycler using a uniform hazardous waste manifest and a registered hazardous waste hauler.

To carry out this analysis assuming that all persons would otherwise comply with the full hazardous waste management standards for all batteries, lamps, and thermostats would not properly inform the public or the decision makers of the actual “real world” environmental impacts of the proposed regulations.

Either the Universal Waste Rule will be adopted or an attempt will be made to enforce the full hazardous waste management standards for all generators of universal wastes. This analysis then must examine the two competing schemes for regulating this huge universe of generators and determine if the Universal Waste Rule approach has significant environmental impacts on the environment compared to regulation under the general hazardous waste management standards.

Better compliance under the universal waste management standards means that more universal wastes will be properly disposed and recycled. The proposed rules do not relax the recycling and disposal rules, but are intended to ensure that more universal wastes are sent to permitted recyclers and hazardous waste disposal facilities. They offer much simpler and less expensive management alternatives for wastes that are otherwise illegally and improperly disposed. There are several reasons why the Universal Waste Rule is believed to provide environmental protection that is superior to the general hazardous waste management standards, even though specific regulatory standards for generation, storage and transportation within the UWR are less restrictive than the general hazardous waste management standards.

1. The nature of the wastes themselves: Universal wastes are a specific subset of hazardous wastes. As such the risks they pose are well understood. The wastes DTSC has designated as universal wastes are wastes that pose a lesser degree of hazard during accumulation and transportation than the higher risk hazardous wastes. Universal wastes pose a limited hazard in management, but pose a serious hazard if they are not ultimately disposed or recycled in a proper manner (the Universal Waste Rule does not relax recycling or disposal requirements). This lower risk results from:

- S The wastes are individually small and contain small amounts of hazardous constituents. Each fluorescent tube, for instance, contains only 15 -30 mg of mercury. However, the total amount of mercury in all tubes can be released in landfills, making non-hazardous disposal an unacceptable risk. Most management accidents will result in breakage of a single tube or, at most, a handful of tubes which constitutes a small risk. (Note that DTSC does not believe that canceled and suspended pesticides meet this standard. They should not be designated as universal waste because they can be packaged in large units where mismanagement would pose an unacceptably high risk if released.)
- S The known and limited risks posed by universal wastes stand in stark contrast to the open-ended risks posed by the general class of hazardous wastes. The general hazardous waste management standards must address materials ranging from spent solvents to discarded nerve gas ordnance. Universal waste types are individually designated in the UWR. The sizes, quantities of hazardous constituents, physical properties, and other parameters are well known and understood. Only those wastes that can be safely

managed under the Universal Waste Rule are designated as universal wastes.

- S Most of these wastes are packaged in very robust containers. Batteries, for instance, are difficult to breach. When they are punctured, only a small amount of material slowly leaks from the battery. No that the rule would then require repackaging of a leaking battery in a tight and compatible overpack container. Larger (street light type) lamps are also very robust and difficult to break. Fluorescent tubes are the universal waste that are the easiest to break, causing a release of the contents. However, broken fluorescent tubes would be required to be managed under the general hazardous waste management regulations thus providing a powerful incentive for protecting these wastes.
- S There are already successful management strategies in place for several of the universal wastes. Rechargeable batteries, for instance, can be dropped off at many retailers or mailed via a prepaid mailer to the Recyclable Battery Recycling Corporation of America (RBRCA). A simple phone call to an 800 number will cause the RBRCA to mail a pre-paid mailing envelope for shipping the recyclable battery to a battery recycler. Under a similar program, thermostats can be sent to the Thermostat Recycling Corporation of America. There are currently three lighting waste recyclers in the State with permits to recycle all types of hazardous waste lamps.

2. The universal nature of their generation: Over one million California businesses and about 11 million California households generate universal wastes. The overwhelming number of generators ensures that the general hazardous waste control standards, now applied to about 74,000 active generators of hazardous waste cannot work for this huge universe. If the full hazardous waste management standards were enforced for all universal wastes, each area of hazardous waste regulation would require augmentation by a factor of at least ten. For instance, the DTSC function which manages the Identification Number program for State hazardous waste generators manages about 100,000 active numbers. It would need augmentation to handle four to five million numbers if all universal waste generators were subject to the general hazardous waste management standards. This increase would result from over 1 million businesses being required to obtain ID numbers for each location at which they operate. Note that households would not be required to obtain an ID number.

3. Incentives for difficult to detect illegal disposal: DTSC's economic analysis accompanying this project estimates that compliance with the universal waste management standards represents less than five percent of the cost of compliance with the general hazardous waste management standards for the same waste. Universal wastes cause adverse effects on the environment when they are illegally disposed. Compared to expected compliance with the general hazardous waste management standards, the Universal Waste Rule will achieve greater ultimate protection of the environment because the likelihood that the waste will be properly recycled disposed will increase.

Illegal disposal is difficult to detect, due to the easily hidden nature of universal wastes, and results in more hazardous constituents finding their way into non-hazardous waste landfills. More alarming, a portion of the universal waste is disposed to the general environment in ditches, fields, and vacant lots - a much more serious environmental threat than even disposal in non-hazardous waste landfills.

4. Business opportunities provided by regulatory simplification: The ease with which a business can collect and accumulate universal wastes provides opportunities for businesses to provide a major part of the solution. Many retailers of batteries and fluorescent tubes could accept spent batteries and tubes, thus providing a valuable service to their customers and simplifying compliance with the Universal Waste Rule for those customers. A takeback program is an incentive for shopping at that business and provides an easy way for generators to comply with the Universal Waste Rule.

New businesses may also be created that collect universal wastes from other small businesses on, for instance, a route basis. These businesses would charge a small amount for taking the waste and would then accumulate larger quantities for shipment to recyclers and disposal facilities. Not only does the new business profit, but its customers profit from the simple and cheap method of properly disposing of the universal wastes.

1. Earth (Workbook; page 11)

Description of Environmental Setting:

The setting is discussed in more detail above in "Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS," incorporated herein by reference. It is clearly the entire State of California and all its geologic provinces.

Analysis of Potential Impacts:

This project will not have a significant impact on earth. For example, this rule will not require that any new landfills built to accept universal waste. The amount of universal waste, while large, is much smaller than high volume hazardous waste wastestreams such as incinerator ash, contaminated soils, and plating sludges. Additionally, a very large universal waste wastestream, fluorescent tubes, must be recycled to quality for management as universal waste.

This project will also not cause increased contamination of soils, leading to excavation and remediation. Illegal environmental disposal greatly increases the incidence of contamination of soils by mercury and other universal waste constituents, which then leads to an increase in soil disturbance for remediation. DTSC has determined, as did the U.S. EPA, that the universal waste management standards are more likely to foster proper recycling and disposal of universal wastes than the general hazardous waste management standards. Application of those standards is more complex and costly than the proposed Universal Waste Rule. This cost and complexity, combined with the loadchecking program at landfills (which causes rejection of loads and rejection of universal wastes during curbside collection of solid waste) provides a powerful incentive for environmentally harmful disposal of universal wastes to the general environment. If universal waste should be discarded in vacant lots, farmers' fields, sloughs and ditches, and other inappropriate place under the proposed regulations.

This project will not result in new facilities being constructed with attendant soil disturbance. The three lighting waste recyclers that currently have permits from DTSC are authorized to recycle the volume of all lighting wastes generated in the State. They have sufficient facility space to increase their capacity to handle 100% of the universal waste lamps generated in the State without physical expansion.

Some new businesses may form to collect and accumulate universal wastes for ultimate shipment to a facility for recycling or disposal. These new businesses can be expected to occupy existing space in warehouses and industrial parks. The formation of these businesses and their locations are speculative and, therefore, not a basis for analysis of this project.

DTSC hopes that new battery recycling capacity is formed in the State; however, it is speculative to state that a battery recycler will commence operation in the State and thus beyond the scope of this analysis. If a battery recycler does commence operation, it will need a hazardous waste facility permit, a process subject to CEQA and the hazardous waste facility permit process. Such analysis would examine any potential impacts to earth from future development.

Note that the full benefits of the Universal Waste Rule to earth will not be realized for all universal wastes until the household and small generator exemptions sunset four years after the regulations become effective. This sunset will benefit the earth because it will discourage much of the disposal outside of hazardous waste landfills and the attendant soil contamination that accompanies such disposal. For more discussion of the impacts of the temporary exemptions see the discussion of the exemptions in the general discussion of the Universal Waste Rule above.

Findings:

<i>Potentially Significant Impact G</i>	<i>Potentially Significant Unless Mitigated G</i>	<i>Less Than Significant Impact Q</i>	<i>No Impact O</i>

2. Air (Workbook; page 13)

Description of Environmental Setting:

The setting is discussed in more detail above in "Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS," incorporated herein by reference. It is clearly the entire State of California and all its air resources.

Analysis of Potential Impacts:

Background:

The universal wastes that pose a threat to the State's air resources are thermostats and universal waste lamps that contain mercury. Both offer a threat to the air through volatilization of released mercury, which the California Air Resources Board includes in its 1997 Toxic Air Contaminant Identification List. Batteries pose little or no threat to air because their hazardous constituents are not volatile. (Note that federal law, the Mercury Containing and Rechargeable Battery Management Act (FBMA) has outlawed intentional addition of mercury to batteries so that batteries will not be a substantial source of mercury.)

The largest threat from thermostats and lamps is breakage and release of their mercury. The mercury then volatilizes and poses an immediate inhalation hazard and an ultimate threat to the State's waters through "fallout." Mercury fallout is formed when vaporized mercury adheres to smoke and dust particles, which then fall to the ground, wash into streams and rivers, and end up in the aquatic food chain.

While street light type lamps (high intensity discharge, sodium vapor, etc.) are thick walled and relatively robust, fluorescent tubes are long, thin, and relatively fragile. Although there is little mercury inside, tubes contain enough mercury to pose an immediate inhalation hazard if broken in a confined space. In addition, their aggregate volume is enough to pose a serious threat to the State's air.

Impacts:

Thermostats: Under the baseline conditions, the full hazardous waste control law, there would be continued release of mercury to the air from thermostats. Both the intact thermostat and the mercury containing capsule are small and easily hidden or tossed into the environment. Currently, numerous thermostats are hidden in garbage or simply thrown away. Virtually all the capsules placed in trash will be broken during compaction or spreading of daily cover thus releasing the mercury inside into both the air and the soil. The Thermostat Recycling Corporation of America (TRC) will not operate in states that do not have a Universal Waste Rule; thus, this option would not be available if the project does not move forward.

The Universal Waste Rule will not increase mercury releases to the air from thermostats. Most thermostats will be

managed by sending them in cushioned mailers to the TRC. The capsules of mercury (ampules) are robust and made with thick strong glass envelopes; these waste are relatively resistant to breakage under normal handling conditions. Professional heating and cooling technicians will have access to these mailers and will simply remove the mercury containing capsule from a thermostat, wrap it in the cushioning material, place it in the mailing tube, and send it (pre paid) to a mercury recycler. Homeowners replacing mercury containing thermostats will also have this option and will also be able to take the thermostat to a household hazardous waste collection facility.

Lamps: Without adoption of these regulations, some, but not all, larger businesses would properly manage the lamp wastes. However, many smaller businesses and most households, faced with the complexity of the general hazardous waste management standards or in many cases, ignorant of those standards, would choose to illegally dispose of their tubes either in the non-hazardous trash or in the general environment.

Placement in the trash ensures that each tube gets broken either prior to placement in the trash, during compacting in trash truck, or during spreading of daily cover at the landfill. As the tubes are broken, most of the mercury escapes into the air, creating immediate inhalation hazards and distributing the mercury across the State by fallout.

The Universal Waste Rule will not increase mercury releases to the air from lamps. Under the new Rule, a greater portion of large generators will recycle their lamps. For the period while households and small generators are exempt, all the mercury from their tubes will continue to be released into the air by breakage. However, during this time, an increasing number of households and small generators will begin to recycle their tubes, as information regarding the use of mercury spreads and alternatives to non-hazardous disposal become more available. Even if no households or small generators recycle during the 4 year phase-in of the new Rule for those handlers, overall mercury releases will decline because more larger generators will recycle, and thus not break their tubes.

Even those small businesses and households that do not choose to recycle their tubes during the four year life of the exemptions will ultimately be required to recycle their tubes yielding yet another decrease in mercury released to the environment. See the discussion of the exemptions above for further discussion of the four year exemption period.

The management standards for lamps prior to recycling are more relaxed under the Universal Waste Rule than under the general hazardous waste management standards. However, the relaxed standards will only apply if the lamps are ultimately recycled. The relaxed management standards (i.e., no manifest requirement and no requirement to use a registered hauler) will not increase mercury releases to the environment for reasons discussed below.

Handlers of the universal waste, such as generators, transporters and accumulation sites, will not receive the benefits of the relaxed standards of the new rule if tubes break. This will provide a strong practical and economic incentive to not break the tubes. If the tubes break prior to or during transportation, the generator or transporter will have to dispose of them as hazardous waste, which is expensive and more complex. Because they do not have to use a registered hauler under the new Universal Waste Rule, some larger generators may also choose to self-transport. Again, they will have a strong incentive to protect the tubes prior to and during transportation.

Handlers that accumulate tubes will also be provided with relaxed standards under the Universal Waste rule, such as the fact that they will not have to possess a permit from DTSC. Instead, they will merely have to follow the same

standards that apply to generators of the waste. The operators of these accumulation sites will have the same incentive to protect the tubes as the original generators.

Transporters operating under the Universal Waste Rule will be subject to less stringent standards, such as the fact they will not have to be a registered hauler. However, under the new Rule, they are not allowed to directly dispose of the waste and they must clean up any spills. Additionally, if a transporter breaks tubes, that transporter must then proceed to handle the waste under the general hazardous waste laws, i.e., possess a registered hauler’s license, use a manifest and dispose as hazardous waste. This will provide a strong incentive for transporters to not break tubes.

Despite the incentives to protect tubes under the Universal Waste Rule, some tubes will break during transportation and accumulation. Nonetheless, the overall number of tubes that break under the Universal Waste Rule will be less than under the general hazardous waste control laws. Thus, the Universal Waste Rule will not cause *increased* releases of mercury into the environment, including the air.

Ref: 1997 Toxic Air Contaminant Identification List, California Air Resources Board

Findings:

<i>Potentially Significant Impact G</i>	<i>Potentially Significant Unless Mitigated G</i>	<i>Less Than Significant Impact G</i>	<i>No Impact O</i>

3. Surface and Ground Water (Workbook; page 17)

Description of Environmental Setting:

The setting is discussed in more detail above in "Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS," incorporated herein by reference. It is clearly the entire State of California and all its waters.

Analysis of Potential Impacts:

Background:

There are several potential paths for universal wastes to negatively affect the waters of the State:

1. Ground water: Ground water is adversely affected primarily by continued disposal of universal wastes into online municipal solid waste landfills, the predominate type in the State. These landfills are not authorized or designed, in general, to receive hazardous waste. When these wastes are disposed into such landfills, the hazardous constituents (portion that does not escape into the air) are released into the landfill contents. There are several possible effects:

- S Direct contamination with hazardous constituents leached from the wastes such as mercury, zinc, nickel, cadmium, etc. can move into groundwater degrading it or making it unusable.
- S The alkalinity of batteries disposed into landfills may leach alkaline soluble constituents such as arsenic and vanadium or directly contribute to the alkalinity of the leachate moving into the groundwater.

Some universal wastes are not even disposed into landfills, and instead are dumped directly onto land. The negative impacts on ground water are the same as above.

2. Surface waters: Surface waters are adversely affected in two ways:

- S Mercury released from broken fluorescent tubes, other hazardous waste lamps, and thermostats can volatilize adhere to dust and smoke particles, and "fallout" to be washed into the State's surface waters.
- S Universal wastes illegally disposed to the general environment can directly wash into surface waters directly polluting them.

When surface waters are polluted with mercury, the mercury settles to the bottom, especially in lakes, slow waters, a estuaries, to be converted to soluble methylmercury by benthic microorganisms. The methylmercury then bioaccumulates in the food chain causing fish and other organisms higher in the food chain to pose a threat to human and animals by ingestion.

Impacts:

Ground water.

Ground water is adversely affected by improper disposal of universal wastes. The adoption of this regulation package will not have a significant negative impact on groundwater because the Universal Waste Rule will not increase disposal at improper locations, such as municipal landfills or empty lots, which would then cause release of contaminants that can endanger ground and surface water. In fact, the relaxed, more cost-effective management standards will cause more larger generators to recycle their lamps, thermostats and batteries. This will reduce the release of mercury and other contaminants at municipal landfills and other locations.

Temporary exemptions for households and small generators will be in place for four years after the Universal Waste Rule becomes effective. During this time, disposal of universal wastes by those generators into non-hazardous solid waste landfills, including those without liners, will continue. This situation will be the same as under the general hazardous waste control laws. However, during this time, an increasing number of smaller businesses and households will properly manage their universal wastes as public information and infrastructure develops for collection and proper management of these wastes. Additionally, at the end of the four year period, a majority of their universal waste should also be diverted from municipal landfills and other improper disposal locations.

The combination of the above factors indicates that, overall, the Universal Waste Rule will not have a significant negative effect on ground water.

Surface Water.

Surface water is adversely affected by improper disposal as well as general releases to the environment that cause "fall-out." This "fall-out" could occur during transportation or accumulation. As discussed above, there is no evidence that the Universal Waste Rule will increase improper disposal. Therefore, that potential cause of damage to surface water will not increase.

The adoption of this regulation package will also not cause a significant increase in general releases. These releases would most likely occur during accumulation or transportation. DTSC finds that the relaxed standards in the Universal Waste Rule will not increase releases during transportation and accumulation.

Thermostats: Thermostats will be eligible for relaxed standards if they are recycled. The Thermostat Recycling Corporation of America (TRC) will not operate in states that do not have a Universal Waste Rule; thus, this option will not be available without the Universal Waste Rule.

The Universal Waste Rule will not increase mercury releases to the groundwater from thermostats. Most thermostats will be managed by sending them in cushioned mailers to the TRC. The capsules of mercury (ampules) are robust and are made with thick strong glass envelopes; these wastes are relatively resistant to breakage under normal handling conditions. Professional heating and cooling technicians will have access to these mailers and will simply remove the mercury containing capsule from a thermostat, wrap it in the cushioning material, place it in the mailing tube, and send it to the TRC.

(pre-paid) to a mercury recycler. Homeowners replacing mercury containing thermostats will also have this option, in addition many will have the option to take the thermostat to a household hazardous waste collection facility.

Lamps: For lamps, the relaxed standards will only apply if the lamps are ultimately recycled. The relaxed management standards (i.e., no manifest requirement and no requirement to use a registered hauler) will not increase mercury releases to the environment (and thus “fall-out” to surface water) for reasons discussed below.

Handlers of the universal waste, such as generators, transporters and accumulation sites, will not receive the benefits of the relaxed standards of the new rule if tubes break. This will provide a strong practical and economic incentive to not break the tubes. If the tubes break prior to or during transportation, the generator or transporter will have to dispose of them as hazardous waste, which is expensive and more complex. Because they do not have to use a registered hauler under the new Universal Waste Rule, some larger generators may also choose to self-transport. Again, they will have a strong incentive to protect the tubes prior to and during transportation.

Handlers that accumulate tubes will also be provided with relaxed standards under the Universal Waste rule, such as the fact that they will not have to possess a permit from DTSC. Instead, they will merely have to follow the same standards that apply to generators of the waste. The operators of these accumulation sites will have the same incentive to protect the tubes as the original generators.

Transporters operating under the Universal Waste Rule will be subject to less stringent standards, such as the fact that they will not have to be a registered hauler. However, under the new Rule, they are not allowed to directly dispose of the waste and they must clean up any spills. Additionally, if a transporter breaks tubes, that transporter must then proceed to handle the waste under the general hazardous waste laws, i.e., possess a registered hauler’s license, use a manifest and dispose as hazardous waste. This will provide a strong incentive for transporters to not break tubes, not cause “fall-out” and thus not pollute surface waters.

Despite the incentives to protect tubes under the Universal Waste Rule, some tubes will break during transportation or accumulation. Nonetheless, the overall number of tubes that break under the Universal Waste Rule will be less than under the general hazardous waste control laws. Thus, the Universal Waste Rule will not cause increased releases of mercury into the environment, including surface water.

Batteries. The relaxed management standards in the Universal Waste Rule (e.g., no manifest and no registered hauler) will also not increase releases of battery contaminants into surface water. As discussed above, the Rule will contain incentives for generators, transporters and handlers that accumulate to protect the universal waste. Although some generators under the Universal Waste Rule may accumulate batteries for a longer period of time than under the general hazardous waste standards, the incremental difference in time will not significantly increase the chances the batteries will leak.

In conclusion, the Universal Waste Rule will not have a significant negative impact on groundwater because it will not increase improper disposal. The Universal Waste Rule will not have a significant impact on surface water because it will not increase improper disposal and will not increase general releases into the environment.

Findings:

<i>Potentially Significant Impact G</i>	<i>Potentially Significant Unless Mitigated G</i>	<i>Less Than Significant Impact O</i>	<i>No Impact Q</i>
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4. Plant Life (Workbook; page 20)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California and all its marvelously varied plant life. Note, however, that most universal waste management takes place in the settled regions of the State rather than some of the more remote areas with their own distinctive plant communities.

Analysis of Potential Impacts:

This project affects households, government and other entities, and businesses. The only anticipated effects possible plant life would come from siting and constructing new hazardous waste facilities, especially landfills. However, universal waste is a small portion of the hazardous waste generated in this State and will not create the need for new landfills. A large portion of universal waste will be recycled rather than disposed. There are already three lighting waste recyclers in the State that can manage the State’s production of hazardous waste lamps. Thermostats are a minor waste that is already recycled for free by the TRC. Operation of a new battery recycler in the State may or may not happen; it is not mandated by the rule and consideration would be speculative at best. Even if a battery recycler were to operate here, it would most likely locate in an existing industrial site and would be subject to a separate CEC analysis as part of the land use and the hazardous waste permitting process.

New offsite intermediate accumulation points and household collection facilities may be constructed. These facilities would have little effect on plant life because they would be located in existing structures or built in industrial zones or landfills where the plant communities are already disturbed. Those new facilities would also be subject to local land laws, which, depending on individual circumstances, require separate CEQA review.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
G	G	G	O

5. Animal Life (Workbook; page 22)

Description of Environmental Setting:

The setting is discussed in more detail above in "Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS," incorporated herein by reference. It is clearly the entire State of California and all its animal life. Note, however, that most universal waste management takes place in the settled regions of the State rather than some of the more remote areas where most non-domesticated animal life is found.

Analysis of Potential Impacts:

Background:

Affects on animal life could potentially occur in two ways:

1. Direct exposure: Animals could be directly exposed to universal wastes. This direct exposure would result from illegal environmental disposal (outside of landfills). As discussed above, the Universal Waste Rule makes such illegal disposal less likely than the full general hazardous waste management regulations, which represent the baseline for this analysis.

2. Exposure from surface water: Mercury, the predominate hazardous constituent in universal wastes, enters the waters of the State by fallout after releases of mercury from broken universal wastes. (Mercury can also enter the waters of the State through illegal environmental disposal). Mercury in the waters of the State, as discussed above, bioaccumulates in the food chain, both contaminating aquatic life and endangering other animals that depend on fish for food.

Impacts:

None of the standards changed in applying the Universal Waste rule should result in a greater potential for risks to animal life because:

- a) the activities will occur in developed areas, and
- b) they should not create or increase releases to the environment.

Recycling and treatment facilities needed to comply are most likely to occur in industrial areas previously disturbed by human use and are generally not conducive to wildlife habitation. These facilities would be designed and permitted to control and contain any releases within the facility's paved and developed boundaries and would typically have buildings or security fences which would preclude wildlife entry.

If any new facility were sited in other than industrial areas, it would be subject to approvals for land use zoning

consistency or local land use permits or hazardous waste facilities permits. These activities are not direct effects of the proposed regulations but would be evaluated separately for impacts to wildlife and sensitive habitat during separate CEQA environmental analysis for the local land use or facilities permitting approvals.

Universal Waste Rule implementation should reduce the mercury released from batteries, fluorescent tubes and thermostats from their disposal in non-hazardous landfills. The risk at unlined and inappropriate landfills is that these items would be mishandled and broken, releasing mercury into the air to fall out on land and wash into streams. The alternative of application of the full hazardous waste management regulations, as discussed above, would tend to increase both illegal disposal to the general environment and to non-hazardous landfills with their associated air release of mercury.

Compared to the baseline, the proposed regulations would immediately promote more proper disposal and recycling by larger generators. Additionally, it would phase in better disposal and recycling practices by smaller generators and households.

Findings:

<i>Potentially Significant Impact G</i>	<i>Potentially Significant Unless Mitigated G</i>	<i>Less Than Significant Impact G</i>	<i>No Impact O</i>

6. Land Use (Workbook; page 24)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California and all its land area. Note, however, that most universal waste management takes place in the settled regions of the State where land use is already to a great degree, determined, and urbanized.

Analysis of Potential Impacts:

Any potential impacts on land use deriving from this project would come from construction of new facilities to manage universal wastes. New offsite accumulation facilities and recyclers may commence operation due to this rule, however they would be likely to use existing industrial and landfill sites rather than attempt to obtain new zoning and develop former open space or residential land. Nonetheless, how many facilities might expand and where would be purely speculative and thus beyond the scope of this analysis. New facilities could, of course, be subject separate review under CEQA.

Universal waste is a small subset of total hazardous waste generation in California. Furthermore, the largest volume universal waste, fluorescent tubes, would be required to be recycled in order to be managed as universal waste. Thus the volume of universal waste to be disposed is so comparatively small that there will be no effect on the already existing hazardous waste landfill capacity in the State and no new hazardous waste landfills will need to be constructed. Even the case where a new landfill facility is required, the facility permitting process requires CEQA review.

Note also that much of the universal waste wastestream is currently disposed in non-hazardous waste landfills. This volume will shift substantially to hazardous waste landfills, thus freeing up additional capacity in the non-hazardous landfills. This effect will be, however, minor given the small proportionate volumes of universal waste.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Less Than Significant Impact</i>	<i>No Impact</i>
G	G	G	O

7. Natural Resources (Workbook; page 25)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California and all its natural resources.

Analysis of Potential Impacts:

The proposed regulations will not directly result in the substantial increased use of natural resources or the additional depletion of their sources. To the degree that the universal waste regulations encourage recycling of metals in the future they will decrease the demand for natural resource extraction. Similarly, to the degree that the universal waste regulations remove barriers to the use of fluorescent lighting, they will decrease the demand for energy and thus the use of oil and natural gas resources.

It is not anticipated that facilities sited under these regulations would hinder natural resource extraction because they are most likely to be in existing industrial zoned urban areas, at public works corporation yards, or at existing landfills. Given that the number and location of such facilities is speculative at this time, it is beyond the scope of this analysis. Those new facilities would also be subject to local land use laws, which, depending on individual circumstances, require separate CEQA review.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Less Than Significant Impact</i>	<i>No Impact</i>
G	G	G	O

8. Risk of Upset (Workbook; page 26)

Description of Environmental Setting:

The setting is discussed in more detail above in "Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS," incorporated herein by reference. It is clearly the entire State of California and all its people, wildlife, and infrastruc

Analysis of Potential Impacts:

Background:

Universal wastes are wastes that do not possess significant reactivity or ignitability or any other chemical characteristics that would lead to fire, explosion, gas cloud formation, or other hazardous incidents. Release of hazardous constituents would pose the most risk from the universal wastes that contain mercury, which are lamps and thermostats. Rupture of batteries is unlikely and would not produce highly mobile constituents. Additionally, the Universal Waste Rule requires leaking batteries to be contained.

Release of mercury would create an immediate inhalation hazard if released in a confined space. It is estimated that release of the contents of one fluorescent tube in a small closed vehicle (about 300 ft³) would create air borne mercury concentrations many times the OSHA permissible exposure limit. However, no vehicles are truly closed. To mitigate the hazards of carbon monoxide in car interiors, all cars exchange at least some air even with all vents and windows closed. Mercury released in such a situation would quickly vent from the auto, thus removing the risk.

Impacts:

Batteries. As discussed above, batteries do not produce highly mobile constituents and rarely leak. Nothing under the Universal Waste Rule changes these characteristics of batteries. Thus, risk of release associated with upset does not significantly increase under the Universal Waste Rule.

Thermostats: Under current conditions, thermostats may sit around a house or business, without any protective covering, until discarded into the garbage and the municipal landfill. The Universal Waste Rule will not increase the risk of mercury releases from thermostats because under the Universal Waste Rule's recycling requirement, most thermostats will be managed by sending them in protective cushioned mailers to the Thermostat Recycling Corporation of America (TRC). Professional heating and cooling technicians will have access to these mailers and will simply remove the mercury containing capsule from a thermostat, wrap it in the cushioning material, place it in the mailing container and send it (pre-paid) to a mercury recycler. Homeowners replacing mercury containing thermostats will also have that option, in addition they may have the ability to take the thermostat to a household hazardous waste collection facility.

Lamps. Fluorescent tubes would be most likely to break and expose persons during storage, accumulation, and

transport. Under the Universal Waste Rule, commercial transportation would most likely be done in cargo boxes separate from the driver giving little or no exposure in case of natural disaster or accident. Transportation exposure in private, enclosed vehicle would not increase for the reasons discussed in the “Background” above. In addition, the Rule requires federal DOT packaging of lamps being transported (see reference below). Such packaging minimizes a potential for release.

Breakage in places of storage and/or accumulation could pose a hazard. However, the Universal Waste Rule requires storage in structurally sound containers or packages adequate to prevent breakage, which shall remain closed and cannot leak or spill. Therefore, any potential for release would be minimized.

Ref: 49 Code of Federal Regulations (CFR), part 171-180.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Less Than Significant Impact</i>	<i>No Impact</i>
G	G	O	G

9. Transportation/Circulation (Workbook; page 29)

Description of Environmental Setting:

The setting is discussed in more detail above in "Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS," incorporated herein by reference. It is clearly the entire State of California and all its roadways.

Analysis of Potential Impacts:

Much of the universal wastes are now disposed in the solid waste landfills. They represent a minor portion of the total solid waste volume and do not add extra trips. If the proposed rule is not enacted, compliance with full hazardous waste management standards would add many trips, since hazardous waste can only be accumulated for 90, 180, or 270 days, depending on the mass of hazardous waste generated and the distance to a hazardous waste disposal site. Under the proposed rules, universal waste can be accumulated for up to one year (or more under certain circumstances) and would require less trips for disposal.

It is anticipated that households will generally utilize household hazardous waste collection facility systems or take-back programs at retailers to send their universal waste for disposal or recycling. Because they can accumulate their universal waste for up to one year, households can take their universal waste to household hazardous waste collection facilities, along with their other household hazardous waste, thus not adding any trips. If they take the spent universal waste to a retailer for a take-back program, they will generally do so as they buy new products to replace the universal waste (a new fluorescent tube or battery).

Universal wastes will be transported from accumulation points to recyclers and disposal facilities in concentrated volumes. However, this will not significantly increase traffic hazards to passengers in other motor vehicles, bicyclist pedestrians since the danger from exposure to universal wastes is minimal in open air situations. Batteries present a potential for burns from their corrosive content. However, this impact can be easily minimized by washing off exposed skin. Increased risk from fluorescent tubes, for example, would come from inhalation concentrated mercury vapors, unlikely to occur in the open air. The Rule requires federal Department of Transportation packaging of lamps being transported (see reference below). This type of container would minimize any potential for release.

Additionally, transportation of concentrated volumes will occur in industrial areas and over major arterials designed to handle routine truck traffic or on the freeway system where they pose less of a shipping risk than many commonly transported hazardous materials and wastes. These industrial areas and freeway systems are already covered by emergency response plans and hazardous materials response teams, in the unlikely event that a spill should occur.

Under the new universal waste standards, the bill of lading records will be carried by transporters and would identify the cargo, if needed during shipment. There will be limited incentive for illegal disposal or other transporter violation due to the lower cost of waste management and the more limited handling requirements for universal wastes. Copies

bills of lading would be kept by facilities to show shipment and receipt and would be available if inspectors needed to verify shipments. Therefore, the extra step of manifesting to insure cradle to grave tracking records being sent to regulators is not necessary and the change of standards should not result in shipping related impacts.

Therefore, the proposed project will have no impact on traffic volume or the level of service and a less than significant impact on traffic hazards.

Ref: 49 Code of Federal Regulations (CFR), part 171-180.

Findings:

<i>Potentially Significant Impact G</i>	<i>Potentially Significant Unless Mitigated G</i>	<i>Less Than Significant Impact O</i>	<i>No Impact G</i>

10. Public Services (Workbook; page 31)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California and all its public services.

Analysis of Potential Impacts:

The proposed regulations do not mandate any new public services or result in a demand upon existing police, fire, medical, water or other governmental services.

It is anticipated that in the longer term there would indirectly be a potential increased demand for collection of some the universal waste streams through publicly controlled household and small quantity generator collection centers. However, this demand would not be immediate because the regulations propose a four year moratorium on their application to household and small business generators. Part of the reason for this moratorium is to allow coordination with local governments on mechanisms and infrastructure needed to provide an efficient collection or recycling system for the covered universal waste streams. This moratorium also provides: (a) some protection to local solid waste services from enforcement prior to the development of an efficient household waste collection system; and (b) time to develop and implement the public education needed to allow effective diversion of universal wastes to the proper recycling, treatment and disposal facilities. To the degree that these regulations divert universal wastes from non-hazardous solid waste disposal this would improve solid waste operations and decrease solid waste facility liability from improper management and disposal of the covered universal waste streams.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Less Than Significant Impact</i>	<i>No Impact</i>
G	G	O	G

11. Energy (Workbook; page 32)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California and all its energy producers.

Analysis of Potential Impacts:

The proposed regulations will not directly result in the substantial increased use of additional energy or increase fossil fuel consumption. To the degree that the universal waste regulations remove barriers to the use of more energy efficient lighting, including fluorescent lighting, they will decrease the demand for energy.

No new facilities are sited or expanded as a direct result of the project regulations. With respect to indirect effects, any facilities sited in response to these regulations should not create a need for new utility systems since they are most likely to be in existing industrial zoned urban areas, at public works corporation yards, or at existing landfills.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Unless Mitigated</i>
G	G	G	G	O

12. Utilities (Workbook; page 32)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California and any utilities in the State.

Analysis of Potential Impacts:

The proposed regulations will not directly result in the substantial increased use of additional energy or increase fossil fuel consumption. To the degree that the universal waste regulations remove barriers to the use of more energy efficient lighting, including fluorescent lighting, they will decrease the demand for energy.

No new facilities are sited or expanded as a direct result of the project regulations. With respect to indirect effects, any facilities sited in response to these regulations should not create a need for new utility systems since they are most likely to be in existing industrial zoned urban areas, at public works corporation yards, or at existing landfills.

Findings:

<i>Potentially Significant Impact G</i>	<i>Potentially Significant Unless Mitigated G</i>	<i>Less Than Significant Impact G</i>	<i>No Impact O</i>
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13. Noise (Workbook; page 32)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California.

Analysis of Potential Impacts:

The project, adoption of regulations, will have no impact on noise generation. Secondary effects, such as increased household hazardous waste collections and increased recycling of universal wastes will largely take place in industrial zones or at landfills, where new noise, if any, would most likely not be significant. Substantial expansion of these types of facilities would most likely trigger CEQA review at the local level.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
G	G	G	O

14. Public Health and Safety (Workbook; page 34)

Description of Environmental Setting:

The setting is discussed in more detail above in "Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS," incorporated herein by reference. It is clearly the entire State of California and all its people.

Analysis of Potential Impacts:

Background:

The main risks to health and safety created by universal wastes are due to mercury in lamps and thermostats and the corrosive contents of batteries. The following analysis explains how this project will not exacerbate, and may very v reduce, those risks.

Broken fluorescent tubes release mercury. A single tube contains little mercury, but even one tube breaking in a sma unventilated space could contribute to a long term health risk. Exposure to multiple broken tubes outdoors can also pose risks. The proposed rule should reduce, or certainly not increase, these types of exposures for the following reasons.

Ignorance of management standards required by the Hazardous Waste Control Law, or attempts to avoid those standards, have caused illegal disposal. This disposal offers risk to the person who crushes the tube and persons handling the broken tubes. Tubes illegally disposed have to be broken into a bag or box to be hidden from sanitation workers and from landfill loadcheck programs. (Sanitation workers and employees at landfills will often reject a tube an entire load of tubes if they see them.)

The person breaking tubes is in the direct path of the mercury released from the tubes. Broken glass contaminated w mercury contaminates the surrounding area and breakage can coat trash containers with mercury. Sanitation worker handling trash that contains broken tubes and landfill employees spreading cover that contains broken tubes can be exposed to mercury.

Impacts:

Lamps: The proposed rule should reduce incentives for purposeful breakage, because the new rule relaxes transportation and management standards for *unbroken* tubes that are recycled, thus encouraging generators to comp with the law. Under the proposed rule, only *broken* tubes will have to be contained in a closed container and managi under the full Hazardous Waste Control Law.

The proposed rule provides further protection for persons managing tubes because more tubes will be sent for

recycling, thus fewer broken tubes should arrive at landfills. This should reduce exposure of sanitation workers and landfill employees to the mercury from broken tubes. Also, fewer crushed tubes being placed in dumpsters and arriving at the landfills should, in the long run, reduce mercury contamination in groundwater. In addition, the Rule requires storage in structurally sound containers or packages adequate to prevent breakage, which shall remain closed and can't leak or spill. Therefore, any potential for release would be minimized.

Thermostats: The project should not increase mercury exposure from thermostats. The proposed rule will require recycling pursuant to a pre-existing, well defined, easy-to-use management system. As is the case for tubes, the rule will probably reduce mercury exposure due to broken thermostats.

Batteries: Leaking corrosive contents from batteries can pose a hazard to persons handling them. The proposed rule will not significantly increase the odds that persons will handle leaking batteries. Under the proposed rule, leaking batteries must be placed in closed containers.

Under the proposed rule, some persons may accumulate used batteries for a longer period of time than they did under the Hazardous Waste Management Law. However, the difference in accumulation time will not increase their risk of exposure, because it usually takes longer than a year for a battery to start leaking. Also, battery leakage is quite visible and contact can generally be avoided or easily washed off.

For reasons described above, the proposed rule will not increase breakage of lamps or thermostats. It will also not increase chances that persons will handle leaking batteries. Thus, the Rule will not increase contamination from mercury or battery corrosives. Therefore, the Project will not have a significant adverse effect on public health and safety.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Potentially Significant Unless Mitigated</i>
<i>G</i>	<i>G</i>	<i>O</i>	<i>G</i>
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15. Aesthetics (Workbook; page 38)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California.

Analysis of Potential Impacts:

This project, the adoption of a regulations package, will have no direct impact on the aesthetics of the State. It will not directly create new facilities in new locations and will not require building of new roads or other infrastructure. It will not damage any coastlines, forests, mountains, or other places. Secondary effects such as increased household hazardous waste collections and increased recycling of universal wastes will largely take place in industrial zones or landfills, where impact on aesthetics, if any, would not be significant. Substantial expansion of these types of facilities would most likely trigger CEQA review at the local level.

Findings:

<i>Potentially Significant Impact G</i>	<i>Potentially Significant Unless Mitigated G</i>	<i>Less Than Significant Impact G</i>	<i>No Impact O</i>
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16. Cultural/ Paleontological Resources (Workbook; page 39)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California.

Analysis of Potential Impacts:

This project will have no direct impact on the cultural or paleontological resources of the State. It will not create new facilities in new locations and will not require building of new roads or other infrastructure. It will not disturb land or other places where these resources are found. Secondary effects such as increased household hazardous waste collections and increased recycling of universal wastes will largely take place in industrial zones or at landfills, where impact on cultural/paleontological resources, if any, would not be significant. Substantial expansion of these types of facilities would most likely trigger CEQA review at the local level.

Findings:

Potentially Significant Impact G	Potentially Significant Unless Mitigated G	Less Than Significant Impact G	No Impact O
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17. Cumulative Effects (Workbook; page 42)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California.

Analysis of Potential Impacts:

There are no other regulations or other projects in progress that would overlap or address the same wastes as these regulations. No new facilities would result directly from these regulations. In the future, other wastes may be added the list of universal wastes. In the future, a new facility such as a battery recycler may apply for a hazardous waste facility permit. However, no new wastes are being added in any other rulemakings at this time and no new facilities have applied for permits to manage universal waste. To analyze the cumulative impact of either of these cases would be speculative at best and inappropriate. If any of these cases becomes true, the cumulative effect of such actions would then be analyzed pursuant to CEQA.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
G	G	G	O

18. Population/Housing/Recreation (Workbook; page 43)

Description of Environmental Setting:

The setting is discussed in more detail above in “Section IV. ENVIRONMENTAL SETTING/ IMPACT ANALYSIS,” incorporated herein by reference. It is clearly the entire State of California.

Analysis of Potential Impacts:

These regulations do not create a new demand for housing and will not alter existing patterns of housing.

Findings:

<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
G	G	G	O

19. Mandatory Findings of Significance (Workbook; page 44)

		<i>Potentially Significant Impact</i>	<i>Potentially Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	G	G	G	O
b)	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	G	G	G	O
c)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	G	G	G	O
d)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	G	G	O	G

V. DETERMINATION OF SIGNIFICANT EFFECT

On the basis of this Initial Study:

- O** I find that the proposed project COULD NOT have a significant effect on the environment. A NEGATIVE DECLARATION will be prepared.
- G** I find that although the proposed project COULD HAVE a significant effect on the environment, mitigation measures have been added to the project which would reduce these effects to less than significant levels. A NEGATIVE DECLARATION will be prepared.
- G** I find that the proposed project COULD HAVE a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

Name of Preparer

Title

Signature of Preparer

Date

INITIAL STUDY
REFERENCE LIST
for
(California Universal Waste Rule, R-97-08)

1. "UNIVERSAL WASTE RULE; 60 DAY PUBLIC NOTICE AND COMMENT PERIOD, PROPOSED REGULATIONS; TITLE 22 CALIFORNIA CODE OF REGULATIONS DIVISION 4.5; (December 19, 2000)"
2. "UNIVERSAL WASTE RULE (R-97-08); INITIAL STATEMENT OF REASONS (December 19, 2000)"
3. "PRELIMINARY ANALYSIS AND FINDINGS REQUIRED BY HEALTH AND SAFETY CODE SECTION 25150.6; September 28, 2000, DTSC RULEMAKING R-97-08; UNIVERSAL WASTE RULE"
4. "58 F.R. 8102 (February 11, 1993)" Proposed UWR
5. "59 F.R. 38288 (July 27, 1994)" Proposed Lamps Rule
6. "60 F.R. 25492 (May 11, 1995)" Final UWR
7. "64 F.R. 36466 (July 6, 1999)" Final Rule - Hazardous Waste Lamps

file: iscklist.wpd